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EXAMINER

SAMS, MATTHEW C

ART UNIT	PAPER NUMBER
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2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/811,432

Applicant(s)

RENSBURG ET AL.

Examiner

Matthew C. Sams

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on 10/2/2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-7, 16-18, 20-22 and 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Scherzer et al. (US 2002/0146983 hereafter, Scherzer).

Regarding claim 1, Scherzer teaches a base station (Fig. 1 [110]) capable of serving a multitude of mobile stations (Fig. 1 [121, 122 & 123]), the base station comprising a transceiver operable to receive from a select one of the multiple mobile stations a pilot strength signal and a power control signal (Page 1 [0007] and Page 15 [0138]) and beam forming circuitry operably to form a downlink traffic beam spatially directed to serve one of the multiple mobile stations with the downlink traffic beam width being set as a function of the pilot strength signal and the power control signal. (Page 1 [0009], Page 15 [0138] and Page 16 [0139-0140])

Regarding claim 2, Scherzer teaches an adaptive antenna array connected to the beam forming circuitry to facilitate forming the downlink beam. (Page 1 [0009])

Regarding claim 3, Scherzer teaches beam forming circuitry operable to provide channels for the traffic and a channel for the pilot signal for serving multiple mobile stations. (Page 9 [0077])

Regarding claim 5, Scherzer teaches the pilot beam carries a pilot signal for use by multiple mobile stations and the pilot strength signal is generated by one of the mobile stations in response to the pilot signal received by one of the mobile stations. (Page 1 [0009], Page 15 [0138] and Page 16 [0139-0140])

Regarding claim 6, Scherzer teaches the traffic beam carries traffic signals associated with one of the multiple mobile stations and the power control signal is generated by one of the multiple mobile stations in response to the traffic signal received by one of the multiple mobile stations. (Page 7 [0059] through Page 8 [0067] & Page 15 [0138] through Page 16 [0140])

Regarding claim 7, Scherzer inherently teaches the power control signal requests the base station to increase or decrease the power of the traffic signal. (Pages 15-16 [0139])

Regarding claim 16, the limitations of claim 16 are rejected as being the same reason set forth above in claim 1.

Regarding claim 17, the limitations of claim 17 are rejected as being the same reason set forth above in claim 2.

Regarding claim 18, the limitations of claim 18 are rejected as being the same reason set forth above in claim 3.

Art Unit: 2617

Regarding claim 20, the limitations of claim 20 are rejected as being the same reason set forth above in claim 5.

Regarding claim 21, the limitations of claim 21 are rejected as being the same reason set forth above in claim 6.

Regarding claim 22, the limitations of claim 22 are rejected as being the same reason set forth above in claim 7.

Regarding claim 31, the limitations of claim 16 are rejected as being the same reason set forth above in claim 1.

Regarding claim 32, the limitations of claim 17 are rejected as being the same reason set forth above in claim 2.

Regarding claim 33, the limitations of claim 18 are rejected as being the same reason set forth above in claim 3.

Regarding claim 34, the limitations of claim 34 are rejected as being the same reason set forth above in claim 5.

Regarding claim 35, the limitations of claim 35 are rejected as being the same reason set forth above in claim 6.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherzer in view of Wong et al. (US-6,453,177 hereafter, Wong).

Regarding claim 4, Scherzer teaches the limitations of claim 3 above, but differs from the claimed invention by not explicitly reciting the pilot beam width is wider than the traffic beam.

In an analogous art, Wong teaches a pilot beam width that is 3-dB wider than the traffic beam. (Col. 15 lines 1-10) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the wireless communication system of Scherzer after modifying it to incorporate the pilot beam width of Scherzer. One of ordinary skill in the art would have been motivated to do this since the traffic beam carries more information and can be the source of more interference; so focusing the beam's direction can limit interference possibilities.

Regarding claim 19, the limitations of claim 19 are rejected as being the same reasons set forth above in claim 4.

6. Claims 8 & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherzer in view of Love (US-6,148,208).

Regarding claim 8, 23 Scherzer teaches the limitations of claim 1 above, but differs from the claimed invention by not explicitly reciting the power control signal comprises a digital gain unit.

In an analogous art, Love teaches power control in a communication system that includes a power control signal that comprises digital gain units. (Col. 7 lines 24-44) At

Art Unit: 2617

the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the communication system of Scherzer after modifying it to incorporate the power control signal of Love. One of ordinary skill in the art would have been motivated to do this since the power control signals allows maintaining an acceptable quality of service while using a minimum amount of transmission power. (Col. 1 lines 41-62)

Regarding claim 23, the limitations of claim 23 are rejected as being the same reason set forth above in claim 8.

7. Claims 9, 10, 24, 25 & 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherzer in view of Blakeney, II et al. (US-5,640,414 hereafter, Blakeney).

Regarding claim 9, Scherzer teaches the limitations of claim 1 above and it is well known that in a CDMA system, a power control bit is punctured every 1.25 msec. Scherzer differs from the claimed invention by not explicitly reciting receiving beam updates less frequently than the power control updates.

In an analogous art, Blakeney teaches soft handoff in CDMA a cellular communication system that includes receiving pilot strength signals less frequently than power control signals. (Col. 18 lines 19-27) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the wireless network of Scherzer after modifying it to include pilot strength signals of Blakeney. One of ordinary skill in the art would have been motivated to do this since measuring pilot

strength signals is required for determining the proper time for a handoff between base stations.

Regarding claim 10, Scherzer in view of Blakeney obviously teaches power control signals are received every 1.25 msec and the beam update time is 100 msec. (Blakeney Col. 18 lines 19-27)

Regarding claim 24, the limitations of claim 24 are rejected as being the same reason set forth above in claim 9.

Regarding claim 25, the limitations of claim 25 are rejected as being the same reason set forth above in claim 10.

Regarding claim 36, the limitations of claim 36 are rejected as being the same reason set forth above in claim 9.

8. Claims 11-15, 26-30 & 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherzer in view of Blakeney as applied to claim 9 above, and further in view of Xiao et al. (US-2004/0023659 hereafter, Xiao).

Regarding claim 11, Scherzer in view of Blakeney teaches the limitations of claim 9 above, but differs from the claimed invention by not explicitly reciting the calculation of a differential pilot strength signal and a differential power control.

In an analogous art, Xiao teaches a pilot information gain control method that includes determining a differential pilot strength signal and transmitting differential power control information. (Page 2 [0023-0025]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the communication system of Scherzer in view of Blakeney after modifying it to incorporate

Art Unit: 2617

the differential power control of Xiao. One of ordinary skill in the art would have been motivated to do this since having differential power control information of pilot channels informs the base station of the reception conditions at the location of the mobile device.

Regarding claim 12, Scherzer in view of Blakeney and Xiao teaches the differential power control comprises a cumulative value of power control signal over the beam update time. (Xiao Page 2 [0023])

Regarding claim 13, Scherzer in view of Blakeney and Xiao teaches the differential power control corresponds to a difference between a value of the power control signal at a first time in the beam update time and a value of the power control signal at a second time in the beam update time. (Xiao Page 2 [0023] e.g. function)

Regarding claims 14 and 15, Scherzer in view of Blakeney and Xiao teaches incrementally changing the power control information (Xiao Page 2 [0023-0025]) and increasing/decreasing the beam width with power increases/decreases. (Scherzer Page 7 [0061])

Regarding claim 26, the limitations of claim 26 are rejected as being the same reason set forth above in claim 11.

Regarding claim 27, the limitations of claim 27 are rejected as being the same reason set forth above in claim 12.

Regarding claim 28, the limitations of claim 28 are rejected as being the same reason set forth above in claim 13.

Regarding claims 29 & 30, the limitations of claims 29 & 30 are rejected as being the same reason set forth above in claims 14 & 15.

Regarding claim 37, the limitations of claim 37 are rejected as being the same reason set forth above in claim 11.

Regarding claim 38, the limitations of claim 38 are rejected as being the same reason set forth above in claim 12.

Regarding claim 39, the limitations of claim 39 are rejected as being the same reason set forth above in claim 13.

Regarding claims 40 & 41, the limitations of claims 40 & 41 are rejected as being the same reason set forth above in claims 14 & 15.

Response to Arguments

9. Applicant's arguments filed 10/2/2006 have been fully considered but they are not persuasive.

In response to the applicant's argument regarding claim 1 that "a beam width set as a function of said pilot strength signal and said power control signal" is not taught or suggested by Scherzer (Page 12), the Examiner disagrees.

Scherzer teaches feedback information is used to determine antenna beam characteristics and attributes that include beam width. (Page 7 [0058-0059]) Scherzer teaches mobile units operating according to IS-95 and GSM protocols allow for mobile unit feedback, including measurement information regarding the power level control derived from the pilot signal's strength. (Page 15 [0138]) Further, Scherzer teaches the power level control derived from the pilot signal's strength is used "in determining beam characteristics" (Page 15 [0138]) and as can be seen above, beam characteristics

Art Unit: 2617

include the beam width. (Page 7 [0058]) Therefore, Scherzer teaches "a beam width set as a function of said pilot strength signal and said power control signal".

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCS
12/13/2006



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